

REMARKS

Reconsideration of this application, in view of the foregoing amendments and the following remarks, is respectfully requested.

Claim Rejections -35 USC § 103

Claims 33-53 rejected under 35 U.S.C. 103(a) as being unpatentable over Youssefmir et al. (6795409) and further in view of Raleigh (6006110) and further in view of Paulraj et al. (6377636). Applicants respectfully traverse these rejections.

The Examiner has repeated the previous rejection in response to Applicants' remarks. Applicants will further explain their remarks in this response to help the Examiner better understand the distinguishing aspects of claims in view of the prior response.

Applicants would like to request the Examiner to note a very basic and fundamental difference between what is recited in claims and cited references. All cited references in combination teach estimating noise (SNR) for a given transmission channel using training tones in a received signal. This estimation is then used to establish a throughput rate for the channel to guarantee an optimal data rate for the channel (or in case of Youssefmir, weighting for a given base station). The cited reference applies the channel estimate determined from training tones to all data tones received on that particular channel (e.g., see Paulraj et al. col. 10, lines 4-23). Further, Youssefmir teaches computing noise estimate based on the received signal to determine weighting factors for a given base station. The general application of channel estimate to all data tones may limit some of the data tones, able to carry more data, to a limited payload according to the worst estimate of a given channel (or weighting for a base station); however, this guarantees a uniform SNR for the channel (or conservative weighting for a given base station).

In a complete contrast and fundamentally different way, claim 33 recites estimating noise for a plurality of a first type of tones; and computing beamforming for at least one of a plurality of a second type of tones based at least in part on noise estimation of at least one of the plurality of the first type of tones that is nearest the at least one of the plurality of the second type of tones in the signal. Applicants request the Examiner to note that as recited in claim 33, the method allows estimating noise for each individual second type of tone (not the entire channel as the cited reference teaches) based on the estimate of a first type of tone that is located nearest to the second type of tone. Among other advantages, this facilitates customization of beamforming for each individual tone based on its own noise estimate rather than the estimate of the entire channel as cited references teach and further allows the equalization of data based on the noise estimation of the nearest training/pilot tone as oppose to equalization based on estimates of the entire channel of received signal (sub-carrier) as described in cited references.

The Examiner has not cited any reference that teaches determining noise estimation based of individual tone based on the noise estimation of a nearest tone within a signal. Most of the citations in references teach channel estimation based on training tones. Applicants believe this clear distinction between cited references and recited claims is patentably distinguishable and accordingly, claims as presented are patentably distinguishable from the combination of cited references.

Applicant believes this application and the claims herein to be in a condition for allowance and respectfully requests that the Examiner allow this application to pass to the issue branch. Please charge any additional fees, or credit overpayment to Deposit Account No. 20-0668. Should the Examiner have further inquiry concerning these matters, please contact the below named attorney for Applicant.

Respectfully submitted,

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